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ABSTRACT

Sex Differences in the School discusses why teaching and learning must often be sex-differentiated. Both biological and cultural factors contribute to sex differences, and these differences help to characterize the preferences of girls and boys for different kinds of learning. Also, conclusive research findings document that girls and boys experience more success and satisfaction with learning tasks which are selected with appropriate reference to sex differences. In fact, some of the underachievement and learning inefficiency, which is evident in the school, can be attributed to the failure to take sex differences into consideration. Therefore, it is essential that the school make provision, whenever it is necessary, for the differences between girls and boys. (Author)

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Sex Differences and The School

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1
INTRODUCTION

Sex differences, between girls and boys in experiences and learning, are real and operative. Thus, each learner must be helped to discover a sex-appropriate learning style. However, the teacher, in order to provide for sex-differentiated learning styles, must know and understand what implications sex differences have for the development and improvement of teaching-learning situations.

The differences between girls and boys have probably not been consciously rejected as something which can influence learning; rather, it seems more likely that sex differences have not been seriously considered in regard to educational planning. In other words, most teachers usually do not take into account whether the learning is to be done by a girl or boy.

Obviously, the teacher, when planning instructional components, must make provision for sex differences. The amount of teacher interest in and cognizance of sex differences helps to determine the extent to which these differences influence educational planning. Essentially, the teacher should structure sex-appropriate teaching-learning situations in recognition of the fact that g rls and boys are very different from each other.

The teacher must not only know about sex differences, but should also know when and how to transfer this knowledge into operational teaching-learning situations. Additionally, teachers should find out whether or not they tend, in their decision-making, to create stereotyped instructional molds. If such molds exist, then it is quite conceivable that inadequate provision is being made for sex differences.

The teacher should take sex differences into considera-

tion whenever he or she selects instructional objectives, subject matter items, activities, materials, and evaluation devices. It follows that both sexes should not always be routinely assigned the same standardized set of educational components. Instead, girls and boys should be involved, whenever it is necessary, with sex-differentiated teaching-learning-situations.

The challenge to provide sex-differentiated education is both complicated and important. This challenge means that the teacher must: (1) accept patterns of sex differences and design teaching-learning situations which allow for the expression of these differences; (2) formulate important identifications without stereotyping; and (3) provide a range of instructional experiences from which the girl or boy can be helped to select and develop a personal life style that is consistent with a positive self-image.

As teachers begin to acquire more information and knowledge about sex differences, it will become increasingly possible for them to base learning activities on characteristics which are unique to the girl or boy. Then, educational experiences will be conceived to meet each learner's needs for effective living, instead of merely focusing upon "subject matter to be covered." Basically, the emphasis will shift from subject-centered to learner-centered teaching-learning situations.

2
THE SIGNIFICANCE OF SEX DIFFERENCES

Each learner is unique; and, therefore, this makes it necessary that teachers develop educational experiences which are distinctively personalized. Consequently, the teacher should take the entire matrix of individual differences into account when making decisions. Harnack writes that:

> The nature of the learner perpetually concerns the teacher. He needs detached knowledge about the learner's intellectual, social, emotional, and physical characteristics. However, the basic teacher need regarding this area relates to utilizing this body of knowledge about the child. The teacher concerns himself not with a child, per se, but rather with the child as a learner in a teaching-learning situation.[1]

Also, Saylor and Alexander state that, "It is impossible not to consider the student, but the degree to which the characteristics of each child are a determinant of the educational experiences provided by the school is a basic issue in curriculum planning."[2]

Numerous research studies document the many ways in which girls and boys differ in regard to inherited traits, and in the ways in which the social order works upon innate differences to accentuate and direct the two sexes along different developmental paths. These studies indicate that sex differences exist in such areas as: social development, emotional maturation, physical growth, academic achievement, and interests. These differences between girls and boys have a pronounced effect upon their learning styles. However, schools for the most part are sex-neutral institutions. This is to say that many educators teach under the assumption that girls and boys are alike with respect to the ways in which they learn.

There seems to be little evidence to indicate that either sex is superior in mental ability.[3] According to most of the available statistics, however, the total school experience leaves much to be desired for the boys:

> More girls than boys graduate from high school (in the ratio of about 51 to 49). And although more boys attend college than do girls, girls often are more successful academically. In school, teachers often find that girls excel in mental and educational achievement; nearly two-thirds of all grade repeaters are boys; more boys than girls, by a huge margin, are underachievers and poor readers; three times as many boys as girls develop stuttering problems.[4]

The foregoing statement is extremely significant, because it points out the need for teachers to be aware of, to understand, and to provide for sex differences in the classroom. This in turn enables the teacher to formulate decisions which can result in improved teaching and learning.

The individual learner is central in the teaching-learning environment. Therefore, the teacher must be aware of and understand the unique individual differences of each learner. Wahle points out that:

> It is difficult for human beings to see others except in terms of their own self image. Teachers may attempt to convey a fact or concept to an immature mind in a way that is comfortable and comprehensible for the teacher. It may be exceedingly difficult for the teacher to accept the reality of confusion or misunderstanding on the part of the learner. Yet we must remind ourselves that thirty children may learn thirty different ways each time the teacher helps to develop a group experience in a classroom.[5]

The teacher is continually making decisions during the teaching-learning process, and his or her consideration of such learner characteristics as sex differences can have an important impact upon the quality of these decisions.

Today's teacher usually accepts the phenomenon of individual learner differences, but, there is much concern as to what degree these individual differences actually influence the decisions which he or she makes. The unique char-

acteristics and needs of each learner mut be accommodated during the course of the instructional process. Goodlad states:

> Children are different, much more different than we have up to now recognized. An essential in seeking to provide intelligently for these differences is eduactional diagnosis of and prescriptions for the individual.[6]

In line with this, the consideration and understanding of sex differences is essential for effective teacher decision-making. Furthermore, if sex differences are not taken into account, we are touching on the basis for some of the underachievement and learning inefficiency that is evident in the schools.

In summary, it should be recognized that schools for the most part are sex-neutral institutions. However, research studies indicate that girls and boys vary in many different ways. These differences between boys and girls highly influence their learning styles. In view of this, it is critical that teachers make provision for sex differences in the classroom.

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3
RESEARCH CONSIDERATIONS CONCERNING SEX DIFFERENCES

Historically, teachers and other adults have often been intrigued about the relationship of sex differences to teaching and learning. Moreover, even cursory attention to sex differences is another step in the quest for increased concern, understanding, and sensitivity regarding learner variability.

It is strange and disconcerting that while we verbalize the fact that individual differences exist and should be provided for; we, nevertheless, tend in actual practice to generally overlook and disregard sex differences. This is emphasized by Neubaur:

> There is a category of individual differences that is often ignored or dealt with in non-demanding generalities. These are the differences between boys and girls — differences in maturation rates; in vulnerability to stress; in learning styles. These are the differences in our expectations for boys and girls and in the stereotypes we build up around these expectations; the differences in the ways teachers and other adults react to boy and girl behavior, assess achievement, offer guidance, and predict future behavior.[1]

The following research evidence indicates that both biologically inherited traits and cultural factors contribute to sex differences, and that these differences characterize the preferences of girls and boys for different kinds of learning.

Bentzen writes that:

> It appears from live-birth records that, although approximately the same number of male infants as female are born, the male infant is biologically more vulnerable to the impact of stress than is the female. It can also be concluded that,

> among school-age children, boys tend to be biophysically less mature than girls of the same chronological age, and that, finally, sex ratios reported in studies of a wide range of learning and behavior disorders include a significantly higher proportion of males than females.[2]

Tyler[3] reports that biological factors may influence sex-differentiated attitudes, interests, and personality traits. For example, the superior size, strength, and motor ability of most boys contributes to sex-differentiated attitudinal and behavioral patterns.

Terman[4] points out that the following cultural factors contribute to sex differentiation: education, clothing, discipline, ideals of conduct, occupational experiences, parental associations, and restriction of mobility.

Ford[5] indicates that many more girls than boys are overachievers in academic work. Perhaps, girls, since they have fewer areas in which to excel in school, attach greater significance to academic achievement.

Cornell[6] says that boys are better than girls at manipulating objects in order to solve problems. On the other hand, girls excel in the ability to read, in linguistic expression, and in orienting themselves to their surroundings.

Terman[7] indicates that girls like the following subjects in this order: English, commercial studies, languages, history, mathematics, and science. Whereas, the boys listed in order of preference: science, mathematics, history, English, and languages.

Richardson and Smitter[8] report that:

> Sex frequently gives a specific direction to learning. Most boys like to make things and many have enthusiasm for arithmetic and science. Often girls show less interest in these activities than do boys but learn social and verbal skills more easily. Adolescent boys are eager to improve their physical strength and skills while girls of the same period are intensely interested in personal appearance.

Cole[9] states that, since the greater proportion of teachers are female, it is easier for girls than boys to find an adult in school to discuss their problems with.

The period of early adolescence, in particular, presents sex differences which should receive careful consideration. During this time many girls are beginning to experience the adolescent growth spurt. On the other hand, most of the boys remain static in regard to physical growth. Therefore, it is important that girls be provided with learning experiences which will enable them to achieve acceptance of their rapidly changing bodies. While the boys must be assured that voice change, development of more pronounced muscles, and physical growth is in the future. In early adolescence, girls and boys tend to choose their own sex more often than the other. During this period, most girl-boy relationships are based on pulling, tugging, and chasing rather than on friendship and mutual liking. It is characteristic of girls at this age to be much more interested in boys, than boys in them.

Thus, it is essential, for those who work with early adolescents, to take sex differences into account. The following statement reinforces this:

> Mature and understanding men and women teachers in the middle grades are valuable as standards against which both boys and girls may test and relate their growing perceptions of their future sex roles.[10]

It is meaningless for the teacher to be concerned with a group of boys or girls, per se. Instead, the teacher should be concerned with the individual learner, and as a consequence with those sex differences which pertain to that learner in terms of his or her developmental stage. Then, concern for sex differences, as they affect the individual learner's needs, interests, and desires, will be a driving force in the development of teaching-learning experiences.

To summarize, sex differences are a fundamental human characteristic, however, most instructional programs make little provision for these differences. There is conclusive evidence, from numerous research studies, that the sexes differ dramatically in regard to learning styles. These differences are so important, that they warrant the teacher's utmost consideration when he or she is structuring teaching-learning situations.

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4
SEX - DIFFERENTIATED INSTRUCTION

The primary factor in any teaching-learning situation is the individual learner. As Oliver puts it, "Ultimately the focus of attention must go from broad generalizations about the activities of a class down to the individuals in it."[1] This implies that teachers should be concerned about each learner's unique characteristics. Saylor and Alexander mention that, "Obviously, it is impossible not to consider the student, but the degree to which the characteristics of each child are a determinant of the educational experiences provided by the school is a basic issue in curriculum planning."[2] The teacher should always be concerned with the uniqueness of each learner:

> The progress of our day in the science of education is nowhere more evident than in the field of individual differences. Here is a clear recognition of the fact that it is the individual child who is to become the citizen, the leader, the criminal, or the public charge; and both the material and spiritual values of the age will depend in large measure upon the habits and attitudes set up in the schools on the part of each individual child.[3]

Teachers for the most part are aware that each learner possesses unique characteristics. Ralph Tyler writes that, "There are few teachers now who fail to recognize a variety of differences among the children in their classes — differences which affect interests, meanings, efforts, and outcomes in school work."[4] In a similar vein, Fred Tyler and William Brownell say, "Human variability is real, inevitable, ineradicable, desirable, and indeed essential."[5] Many individual differences are quite unobtrusive, but such characteristics as sex, age, and socio-economic status are more obvious. Effective teaching-learning situations depend upon the recognition of learner differences. Waetjen observes that:

> Hardly a book, article or monograph written in the field of education of psychology fails to make some reference to human variability. Indeed it is a point of honor for us to affirm that curriculum content and instructional activities must be geared to the individual differences of learners. We are convinced that these variations in human traits and abilities are a reality. Not always are we convinced, however, that these differences are good or that they do, indeed, enter into the process of learning.[6]

Girls and boys do not learn differently simply because they are biologically different, since each of the sexes is taught from early in life to behave in sex-appropriate ways. So effective is this teaching that by the time girls and boys reach school they view their world, and react to it in ways which are unique to their sex. However, Waetjen and Fisher note that:

> Studies have established that girls receive a greater number of superior grades than boys, while boys receive significantly more below average and failing grades than do girls. Memships in school honor societies and honor rolls indicate an imbalance in favor of girls.[7]

It should be recognized that sex differences do not function in isolation. Every learner possesses characteristics of both a tangible and an intangible nature. These characteristics are interrelated, and are reciprocally dependent upon one another. Thus, the teacher should not think of learner characteristics as being fragmented; but, instead, as existing in a cohesive cluster.

The teacher should allow individual learner characteristics to influence his or her decisions relative to the formulation of teaching-learning situations. According to Herrick, "A teacher makes a number of different kinds of educational decisions when dealing with the problem of individual differences in the classroom."[8] Therefore, the concern for such learner characteristics as sex differences should be a vital part of the teacher's planning. This is further substantiated by the conclusive evidence which indicates that girls and boys differ in their approach to learning tasks.

Each learner requires an individualized instructional program so that his or her unique characteristics can be ef-

fectively accommodated. The endeavor to adapt educational experiences to such learner characteristics as sex differences is a very time-consuming process. Nevertheless, individualized instructional programming necessitates that teachers have sufficient time in which to take these learner differences into account.

In all, the teacher cannot design meaningful teaching-learning situations unless he or she takes the individual characteristics of the learners into consideration. There is a category of individual differences, namely the differences between girls and boys, which are often not translated into teaching-learning situations. Therefore, the need exists in education to more effectively relate teacher decision-making to the sex differences of the learners.

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A FINAL WORD

Conclusive research findings reveal that girls and boys experience more success and satisfaction with learning tasks which are selected with appropriate reference to sex differences. However, the teacher cannot construct sex-differentiated instructional components unless he or she possesses awareness, knowledge, and understanding concerning the sex differences of the learners. This means that teachers must be familiar with information which delineates what sex differences mean for planning sex-appropriate teaching-learning situations.

Teachers, who select instructional components on the basis of sex differences, are forced to provide each girl or boy with an individualized instructional program. This is due to the fact that sex-differentiated instructional programs intrinsically involve the full spectrum of the learner's characteristics.

Obviously, sex differences are real and significant; and, therefore, should constitute an important part of the teacher's knowledge base. Consequently, the need exists for more intensified collection, analysis, and dissemination of information about sex differences, so that the teacher can be helped to better understand how to deal with these differences in the classroom.

If education is to be improved, through taking sex differences into account, it is essential that the teacher be provided with increased time to devote to teacher pre-planning and learner-teacher planning. Furthermore, teachers, both individually and collectively, must be encouraged to develop and improve their skills, in both teacher pre-planning and learner-teacher planning, and to refine their effectiveness in dealing with sex differences in the planning of instruction.

It is crucial that the teacher have opportunity to experiment and perform research in relation to working with sex differences in the classroom. For, it is only through such experimentation that the teacher will be able to identify how sex differences have significance for the planning of meaningful educational experiences. Also, it is important for improved schooling that teachers share such experiences with colleagues in their own schools, systems, and regions. Analysis of such shared experiences can provide teachers with a valuable source of information for better understanding how to make more effective use of sex differences in the classroom.

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